REMARKS

Applicants acknowledge the First Action of 25 FEB. 2002, and request reconsideration of the application, as amended.

ELECTION

Responsive to Page 3, Paragraph 3, of the Action, Applicants confirm the election of the claims of Group I, including original claims 11-13 and 23-36 and new claims 42-47 presented herewith.

Claims 42-46 are intended to correspond to the claims of NAIR U.S. Patent 6,318,965, a copy of which was submitted on 6 AUG. 2002 as part of a Supplemental Information Disclosure Statement. The present application claims priority of German application **DE 198 26 458**, filed 13 JUNE 1998, *ten months before* the U.S. filing date of the NAIR disclosure (13 APR. 1999); see the German/English inventor declaration, page 2, and Patent Rule 55(a), reproduced at M.P.E.P. § 201.13. The filing receipt mailed 30 JAN. 2001 (within 4 months of the §371 filing date) recited the German priority data. The Examiner will recall that the GATT implementing legislation, ("Uruguay Round Agreements Act") Public Law 103-465, enacted DEC. 1994, also permits proof of invention in a WTO member country (i.e. including Germany) *even before* the filing date of the German application. Reference numerals have been added to facilitate reading the claims on the present disclosure and to demonstrate that they are supported in the present specification. It is proposed that FIGS. 19 be amended to include wording from page 20, and FIG. 21 be amended to include wording from pp. 21-22.

CLAIM REJECTION - § 102(a)

Claims 23-36 were rejected as anticipated by ARCHER/G.E. (USP 5,592,058). The Office has contended that ARCHER teaches a microprocessor 102 having a read-only memory (ROM 106) and a serial interface to provide a connection to an Application-Specific Integrated Circuit (ASIC 112), a system control such as a thermostat connected to the microprocessor, and a fan. The Office further contends that ARCHER teaches a fan which operates in response to a communication signal provided by the microcontroller, that the remaining features are either "design expedients," matters of "design choice," or "interfaces well known" in the motor control art. Applicants respectfully disagree.

ARCHER is a **1992** design which relies (see col. 5, lines 22-55) upon a programmable non-volatile memory 120 which contains pre-programmed control characteristics (see col. 6, lines 45-47). The unique fan system recited by Applicants results in a truly effective system which includes a microcontroller with memory and an interface which provides a connection to a host computer system that can be dynamically programmed by the user, thereby *eliminating the need for pre-programming* the external fan controller at the time of manufacture. The present invention, as recited by Applicants, further provides controllers which can be distributed. With such an arrangement, the host computer system may be dynamically and continuously interfaced with each fan, thus

providing an optimum environment for their operation, because the host computer system has the greatest knowledge of the entire system. By integrating a microcontroller with a fan motor, the connection between the microcontroller and the fan motor allows the microcontroller to pass a commutation signal to the fan motor in response to operating parameters such as a sensed motor current. Speed, current, or temperature information can be stored in a non-volatile memory of the microcontroller which interfaces directly with the host computer system, thereby eliminating the requirement of an external fan controller. In operation, the microcontroller allows the fan or bank of fans to be custom-configured by the host computer as the need may arise; see page 30, lines 2-11, of the present specification. With such an arrangement, the host computer system can be used to download control information or instructions directly to the fan and store this information in the volatile or in the non-volatile memory of the fan. Therefore, if the fan were to experience any kind of power interruption, the control information would be preserved in the non-volatile memory until the restoration of power. Examples of control information available include startup current and desired rpm. The motor current sensing system can detect actual motor current and send signals to the microcontroller, which respond to the control information stored in the non-volatile memory, to control current and rpm of the fan motor appropriately. An alarm can be triggered if the rpm of the fan does not rise sufficiently during start-up, as described in the specification. Further, the rpm rate can be set dynamically, via

the host computer, to various user-defined parameters, to instruct the fan motor to adjust its rpm to achieve a given temperature defined by the user parameters, as described on page 30, lines 4 to 11.

ARCHER does not teach, suggest, or disclose a fan system that includes a microcontroller having memory and an interface to provide a connection to a host computer system which can provide a plurality of control instructions to the microcontroller. Instead, ARCHER teaches use of an Application-Specific Integrated Circuit (ASIC) for electronically controlling a plurality of gate drives. Specifically, ARCHER discloses (col. 4, lines 32-38): "Microprocessor 102 provides a set of motor control signals (M.C.S.) via line 110 to an application specific integrated circuit (ASIC) 112 or universal electronically commutated motor integrated circuit (UECM IC, not shown) for electronically controlling a plurality of gate drives 130 (see FIG. 26). The ASIC 112 provides information to microprocessor 102 via line 111."

The Office's contention, that the use of an ASIC 112 as taught by ARCHER (which provides **pre-programmed** information to the microprocessor 102) is the equivalent of Applicants' claimed host computer system, which dynamically provides a plurality of data to the microcontroller, is incorrect. An ASIC is defined in Newton's Telecom Dictionary (15th Edition, page 64) as "Application Specific Integrated Circuit. This is a chip that has been built for a specific application. Manufacturers use ASICs to consolidate many chips into a single package, reducing the system board size and

power consumption." In contrast, a computer is defined as: "An electronic device that accepts and processes information mathematically according to previous instructions. It provides a result of this processing via visual displays, printed summaries or in an audible form." (Newton's Telecom Dictionary, 15th Edition, page 190, © 1999, published by Miller Freeman, Inc., New York, NY).

Further, ARCHER teaches that, as part of the process of manufacture, the system is calibrated with predetermined characteristics (see col. 6, lines 45-47) and teaches the use of Programmable Read-Only Memory (EEPROMs) with parameters stored therein (see col. 8, lines 6-19).

As shown above, the use of a pre-programmed ASIC chip and read-only memory, as taught by ARCHER, is clearly not the equivalent of Applicants' claimed host computer system which dynamically provides a plurality of control instructions to the microcontroller. Indeed, by choosing an ASIC, instead of a host computer system, ARCHER actually teaches away from dynamically providing control instructions to the microcontroller, as claimed by Applicants.

The claimed fan system includes a host computer system which provides a plurality of control instructions to the microcontroller and which are stored in the memory. The unique feature of providing control instructions to the microcontroller eliminates the need for pre-programming the external fan controllers at the time of manufacture. Further, the host computer system, with its knowledge of the thermal load of the entire system (see page 30,

lines 4-11) can continuously interface with each fan, providing an optimum environment for its operation.

Moreover, ARCHER provides no suggestion for the stored directory, as recited in claims 23-25. This directory is shown in FIG. 19. Because of PCT requirements, this FIG. had to be "expurgated" since the PCT regulations strictly limit the amount of text in the drawings. In order to facilitate understanding, Applicants propose to provide FIGS. 19 & 21 in "unexpurgated" form.

Since one cannot afford to build a cheap fan with fast data transfer means, the inventors devised the inventive method of using shortcut addresses for data transfer. Therefore, one has short object addresses 282, e.g. "03" for setpoint speed and "04" for actual speed. This allows "telegrams" of the type"03 4600" meaning that setpoint speed is to be 4600 rpm. Object table 280 would then give the necessary additional information, namely that this info has two bytes, is to be stored in the EEPROM and at hardware address 0x01. Therefore, these extra bytes need not be transferred, which permits faster communication, in spite of the limitations on transmission speed. Moreover, this also permits checking for transmission errors, as described in the specification.

Thus, even with a slow system of data transfer, e.g. 1000 baud (see page 23, line 12), one can transfer data rather quickly, since the recited directory feature provides a cheap form of data compression. Expensive data compression circuitry could not be provided within a commercially viable manufacturing budget.

ARCHER does not even remotely suggest such a stored direction with predefined parameters of data transfer. The "parameter select signal" of ARCHER simply serves to select one parameter, out of a plurality of parameters stored at the factory (see col. 6, lines 34-44). No stored directory of the type recited in the present claims would be needed for ARCHER's purposes, since this is a simple type of selection, e.g. "Select stored time constant 1" or "Select stored time constant 2" (see col. 6, line 37). No data transfer regarding the values of these constants can take place, since they are probably stored in memory 120 at the factory, and **then** the memory is mounted on the circuit board. Therefore, ARCHER could not, in any way, suggest the subject-matter of claims 23-36.

Conclusion

In view of the foregoing amendment and comments, it is respectfully submitted that claims 23-36 and 42-47 are allowable. If the Examiner detects any remaining informalities which need to be corrected to place the application in condition for allowance, a telephone call to Applicants' counsel is invited. It is noted that **no objection** to the drawings (box 10) has been made, and that receipt of the priority document has been acknowledged (box 13-a-1, form PTO-326, and form PCT/DO/EO/903).

If any extension or additional fee is necessary, please construe this paper as a Petition therefor, and charge the fee to Deposit Account 23-0442.

Respectfully submitted,

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Att. Docket No. 870-003-128

Enclosures: Proposed drawing correction to FIGS. 19 & 21
Transmittal with petition for 3-month extension
Check for extension fee & extra claims fees

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